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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/964,270	09/26/2001	Michael A. Guillorn	UBAT:033US/JJB	9947
38396	7590	01/21/2005	EXAMINER	
JOHN BRUCKNER, P.C. 5708 BACK BAY LANE AUSTIN, TX 78739			QUARTERMAN, KEVIN J	
			ART UNIT	PAPER NUMBER
			2879	

DATE MAILED: 01/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/964,270

Applicant(s)

GUILLORN ET AL.

Examiner

Kevin Quarterman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 20 and 22-50 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 20 and 22-50 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 29 October 2004 has been entered.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 20 and 22-47 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Independent claims 20 and 35-37 cite "an electrically conductive interconnect located either on an insulating substrate or a (semi)conductive substrate that has been coated with an insulating layer." The parentheses placed around the term *semi* in the above citation make the claim vague. Terms placed in parentheses are normally ignored. Thus, it is unclear to the Examiner whether substrate is conductive or semi-conductive. Due to their dependency upon the above mentioned independent claims, all other pending dependent claims are also deemed indefinite.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 20 and 22-50 are rejected under 35 U.S.C. 102(b) as being anticipated by Eldridge (US 6110823).

7. Regarding independent claim 20, Figure 1E of Eldridge shows an apparatus comprising an electrically conductive interconnect (120) located on an insulating substrate (108) or a (semi)conductive substrate that has been coated with an insulated layer; and at least one vertically aligned carbon nanofiber (102) coupled to the electrically conductive interconnect.

8. Regarding claim 22, Eldridge discloses the at least one vertically aligned carbon nanofiber including a plurality of substantially vertically aligned carbon nanofibers (col. 57-58).

9. Regarding claim 23, Figure 1E of Eldridge shows a catalyst (134) coupled to the at least one vertically aligned carbon nanofiber.

10. Regarding claim 24, Eldridge discloses the catalyst including at least one metal selected from the group consisting of nickel, iron, and cobalt (col. 23, ln. 35).

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11. Regarding claim 25, Eldridge discloses the substrate including at least one member selected from the group consisting of silicon, quartz, sapphire and magnesia (col. 22, ln. 52-56).
12. Regarding claim 26, Eldridge discloses the substrate being optically transmissive, since it is made of the same material (MPEP § 2112.01).
13. Regarding claim 27, Eldridge discloses the electrically conductive interconnect including at least one refractory metal selected from the group consisting of W, Mo, Ta, and Nb (col. 79, ln. 16-22).
14. Regarding claim 28, Figure 1E of Eldridge shows an electrochemical passivator (124) coupled to at least a portion of a sidewall surface of the at least one vertically aligned carbon nanofiber.
15. Regarding claim 29, Eldridge discloses the electrochemical passivator including a dielectric layer including at least one member selected from the group consisting of  $\text{SiO}_2$ ,  $\text{Si}_3\text{N}_4$  and a polymer (col. 75, ln. 61-65).
16. Regarding claim 30, Figure 1E of Eldridge shows a tip of the at least one vertically aligned carbon nanofiber being not passivated.
17. Regarding claim 31, Figure 1E of Eldridge shows a buffer (132) between the at least one vertically aligned carbon nanofiber and the electrically conductive interconnect.
18. Regarding claim 32, Eldridge discloses the buffer including at least one substance selected from the group consisting of Ti, W, Mo, and titanium nitride (col. 76, ln. 16-20).

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19. Regarding claim 33, Figures 14A-G of Eldridge show the at least one vertically aligned carbon nanofiber including a plurality of fibers that are individually electrically addressable via the electrically conductive interconnect.

20. Regarding claim 34, Figure 1E of Eldridge shows a parallel lead (128) for active capacitance cancellation coupled to the electrically conductive interconnect.

21. Regarding independent claim 35, Figure 1E of Eldridge shows an apparatus comprising an electrically conductive interconnect (120) located either on an insulating substrate (108) or a (semi)conductive substrate that has been coated with an insulating layer, and at least one vertically aligned carbon nanofiber (102) coupled to the electrically conductive interconnect.

22. Regarding independent claim 36, Figure 1E of Eldridge shows an apparatus comprising an electrically conductive interconnect (120) located either on an insulating substrate (108) or a (semi)conductive substrate that has been coated with an insulating layer, and at least one vertically aligned carbon nanofiber (102) coupled to the electrically conductive interconnect.

23. Regarding independent claim 37, Figure 1E of Eldridge shows a kit comprising an electrically conductive interconnect (120) located either on an insulating substrate (108) or a (semi)conductive substrate that has been coated with an insulating layer, and at least one vertically aligned carbon nanofiber (102) coupled to the electrically conductive interconnect.

24. Regarding claim 38, Eldridge discloses the kit comprising instructions throughout the specification.

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25. Regarding claim 39, Figure 1E of Eldridge shows an electrochemical passivator (124) coupled to at least a portion of a sidewall surface of the at least one vertically aligned carbon nanofiber.

26. Regarding claim 40, Eldridge discloses the electrochemical passivator including a dielectric layer including at least one member selected from the group consisting of  $\text{SiO}_2$ ,  $\text{Si}_3\text{N}_4$  and a polymer (col. 75, ln. 61-65).

27. Regarding claim 41, Figure 1E of Eldridge shows a tip of the at least one vertically aligned carbon nanofiber being not passivated.

28. Regarding claim 42, Figure 1E of Eldridge shows an electrochemical passivator (124) coupled to at least a portion of a sidewall surface of the at least one vertically aligned carbon nanofiber.

29. Regarding claim 43, Eldridge discloses the electrochemical passivator including a dielectric layer including at least one member selected from the group consisting of  $\text{SiO}_2$ ,  $\text{Si}_3\text{N}_4$  and a polymer (col. 75, ln. 61-65).

30. Regarding claim 44, Figure 1E of Eldridge shows a tip of the at least one vertically aligned carbon nanofiber being not passivated.

31. Regarding claim 45, Figure 1E of Eldridge shows an electrochemical passivator (124) coupled to at least a portion of a sidewall surface of the at least one vertically aligned carbon nanofiber.

32. Regarding claim 46, Eldridge discloses the electrochemical passivator including a dielectric layer including at least one member selected from the group consisting of  $\text{SiO}_2$ ,  $\text{Si}_3\text{N}_4$  and a polymer (col. 75, ln. 61-65).

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33. Regarding claim 47, Figure 1E of Eldridge shows a tip of the at least one vertically aligned carbon nanofiber being not passivated.

34. Regarding claim 48, Figures 14A-G of Eldridge show the at least one vertically aligned carbon nanofiber including a plurality of fibers that are individually electrically addressable via the electrically conductive interconnect.

35. Regarding claim 49, Figures 14A-G of Eldridge show the at least one vertically aligned carbon nanofiber including a plurality of fibers that are individually electrically addressable via the electrically conductive interconnect.

36. Regarding claim 50, Figures 14A-G of Eldridge show the at least one vertically aligned carbon nanofiber including a plurality of fibers that are individually electrically addressable via the electrically conductive interconnect.

37. Claims 20 and 22-24, 27, 31-32, and 35-38 are rejected under 35 U.S.C. 102(e) as being anticipated by Simpson (US 6692324).

38. The Examiner notes that the term *semi* placed inside of parentheses is ignored in this analysis of the claims, thus making the substrate conductive and coated with an insulating layer.

39. Regarding independent claim 20, Figure 3G of Simpson shows an apparatus comprising an electrically conductive interconnect (305) located either on an insulating substrate or a (semi)conductive substrate (300) that has been coated with an insulating layer (330), and at least one vertically aligned carbon nanofiber (102) coupled to the electrically conductive interconnect.



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40. Regarding claim 22, Figure 10E of Simpson shows the at least one vertically aligned carbon nanofiber including a plurality of substantially vertically aligned carbon nanofibers.

41. Regarding claim 23, Figure 3G of Simpson shows a catalyst (320) coupled to the at least one vertically aligned carbon nanofiber.

42. Regarding claim 24, Simpson discloses the catalyst including at least one metal selected from the group consisting of nickel, iron, and cobalt (col. 6, ln. 67).

43. Regarding claim 27, Simpson discloses the electrically conductive interconnect including at least one refractory metal selected from the group consisting of W, Mo, Ta, and Nb (col. 6, ln. 60-61).

44. Regarding claim 31, Simpson discloses a buffer between the at least one vertically aligned carbon nanofiber and the electrically conductive interconnect (col. 11, ln. 18).

45. Regarding claim 32, Simpson discloses the buffer including at least one substance selected from the group consisting of Ti, W, Mo, and titanium nitride (col. 11, ln. 18).

46. Regarding independent claim 35, Figure 3G of Simpson shows a sensor (col. 6, ln. 3) comprising an electrically conductive interconnect (305) located either on an insulating substrate or a (semi)conductive substrate (300) that has been coated with an insulating layer (330), and at least one vertically aligned carbon nanofiber (102) coupled to the electrically conductive interconnect.

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47. Regarding independent claim 36, Figure 3G of Simpson shows a field emitting array (col. 5, ln. 56) comprising an electrically conductive interconnect (305) located either on an insulating substrate or a (semi)conductive substrate (300) that has been coated with an insulating layer (330), and at least one vertically aligned carbon nanofiber (102) coupled to the electrically conductive interconnect.

48. Regarding independent claim 37, Eldridge discloses a kit comprising an electrically conductive interconnect (305) located either on an insulating substrate or a (semi)conductive substrate (300) that has been coated with an insulating layer (330), and at least one vertically aligned carbon nanofiber (102) coupled to the electrically conductive interconnect.

49. Regarding claim 38, Simpson discloses the kit comprising instructions (col. 10, ln. 48-49).

### ***Response to Arguments***

50. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

**Contact Information**

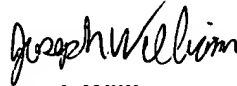
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Quarterman whose telephone number is (571) 272-2461. The examiner can normally be reached on M-TH (7-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin Quarterman  
Examiner  
Art Unit 2879

kq   
13 January 2005

  
**Joseph Williams**  
**Primary Examiner**  
**Art Unit 2879**